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| APPLICATION NO.                                                                           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/644,088                                                                                | 08/20/2003  | Fujio Akahane        | Q77070              | 4967             |
| 23373                                                                                     | 7590        | 12/14/2005           | EXAMINER            |                  |
| SUGHRUE MION, PLLC<br>2100 PENNSYLVANIA AVENUE, N.W.<br>SUITE 800<br>WASHINGTON, DC 20037 |             |                      | CRANE, DANIEL C     |                  |
|                                                                                           |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                           |             |                      | 3725                |                  |

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|                              |                               |                                |  |
|------------------------------|-------------------------------|--------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/644,088 | Applicant(s)<br>AKAHANE ET AL. |  |
|                              | Examiner<br>Daniel C. Crane   | Art Unit<br>3725               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.  
 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6-16 is/are pending in the application.  
 4a) Of the above claim(s) 12-16 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-4 and 6-11 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## REJECTION OF CLAIMS OVER PRIOR ART

Claims 1-4 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeglinski (4,425,777) in view of Rooney (5,144,709). Jeglinski discloses the basic method of manufacturing a liquid ejection head having chambers (funnel shaped region) and nozzles communicating with the chambers where the manufacturing includes a forging die 2. See column 3, last full paragraph, in Jeglinski where the plate is formed with a plurality of chambers and corresponding nozzles. It is well recognized in the progressive die art to provide a combination of reference holes and deformation absorbers so as to accommodate the shaping operation as the workpiece is sequentially fed through the dies. Rooney shows that this is known in the art by providing the metal plate 42 with reference parts 48, recess portions 85 (see Figure 3) at a first region and deformation absorbers 66, 72 in the form of cutouts at a second region between the first region and the reference part. Deformation absorbers 66, 72 are established in that cutouts cooperate with dog-bone inserts 82 inserted into the cutouts 66, 72. It would have been obvious to the skilled artisan at the time of the invention to have modified Jeglinski's process by continuously forming the liquid ejection head in a progressive die system while using reference parts and deformation absorbers using the concepts taught by Rooney so as to facilitate accurate shaping and centering of the product in the progressive dies. In accordance with long held decisions:

“We would note that it is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one skilled in the art the modification called for by the claims.” (Emphasis added) *In re Beckum et al.*, 169 USPQ 47.

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As to claim 3, applicant's attention is directed to column 5, lines 57-62, of Rooney where the shape of the cutouts (deformation absorbers) in conjunction with the dog bone inserts 82 (also establishing the deformation absorbers) absorbs any deformation imparted during the cavity 85 forming to prevent the flow of metal into the reference part. As to claim 6, it is the examiner's position that the sequence of cutting operations relating to the reference part and deformation absorber would have been a matter of choice in the manufacture of the strip material. Note page 6, lines 15-16, where this is a matter of preference. Rooney shows that the reference part 48 is cut prior to the formation of the deformation absorber 66, 72 (see Figure 2). Since the sequence does not affect the overall manufacture of the part, it is maintained that it is dependent upon desired machine design. This also applies to the limitation of claim 11 where the skilled artisan would select various dimensions based upon desired structural needs in the ink jet and adjust the spacing between the recess portions as needed.

#### **RESPONSE TO APPLICANTS' COMMENTS**

Applicants' comments have been carefully considered. As to the applicability of the combination of Jeglinski and Rooney, this is considered tenable. Applicants' contend that the deformation absorbers 66 and 72 in Rooney are formed after the plastic working for forming the circular aperture 50 is performed. While it is true that the circular aperture 50 is formed prior to the forming of the deformation absorbers 66 and 72, it is clearly shown in Figure 2 of Rooney that the plastic working (deforming) for forming the recesses 85 are formed after the formation of the deformation absorbers 66 and 72 (see Station B in Figure 2). The fact that the aperture 50 is formed prior to the formation of the deformation absorber 66 and 72 is really a moot point

because the critical feature, both claimed and illustrated by Rooney, involves the “plastic working” (in Rooney, this is the deformation that produces the recess 85) after the deformation absorbers are produced. Contrary to applicants’ comments, Rooney does not teach away from the claimed process.

#### **WITHDRAWAL OF NONELECTED CLAIMS**

Claims 12-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 15, 2004.

#### **FINAL OFFICE ACTION**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

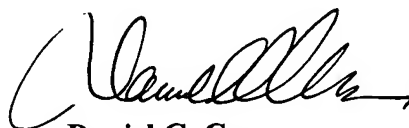
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## **INQUIRIES**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner D. Crane whose telephone number is **(571) 272-4516**. The examiner's office hours are 6:30AM-5:00PM, Tuesday through Friday. The examiner's supervisor, Mr. Derris Banks, can be reached at **(571) 272-4419**.

Documents related to the instant application may be submitted directly to Group 3700 by facsimile transmission at all times. Applicant(s) is(are) reminded to clearly mark any transmission as "DRAFT" if it is not to be considered as an official response. The Group 3725 Facsimile Center number is **(571) 273-8300**. The Examiner's FAX number is **(571) 273-4516**.

DCCrane  
December 9, 2005



**Daniel C. Crane**  
Primary Patent Examiner  
Group Art Unit 3725